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BESS Newsletter

Biosystems Engineering and Soil Science
Publications and Other Works

11-17-2008

BESS 11/17/08

Department of Biosystems Engineering and Soil Sciences

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ASABE trip participants were L to R: Alex McLemore, Dr. Paul Ayers, Ashley Johnson, William Nichols, Kristopher Langston, Becca Messer, Mitch Groothuis (rear center), Marisol Benitez, Ramirez, Sean Nester, Tomas Martin, Constance Marie Hugo, Boone Hillenbrand, John Krukerberg.

MDA "Lock Up" Nets Big Fish

On November 5, Eric Drumm was "locked up" as part of a benefit for the Muscular Dystrophy Association (MDA). This is an annual fund drive in which participants are taken to a jail (at the Butcher Shop restaurant) with resulting "bail" money going to the MDA. With the help of many friends and colleagues, \$775 was raised to get Eric out of jail. Special thanks to Lesia Rucker who was adept at shaking down the BESS faculty and staff for cash donations which supplemented the contributions raised on the MDA website.



ASABE Students Tackle the Ocoee!!

The ASABE student club organized a white water rafting trip to Ocoee in October. The weather was overcast and chilly, but not too cold to risk falling in the Class 4 rapids! The group had very good guides and enjoyed the trip very much. The club plans a charity fund raising for the Ronald McDonald house next. Please contact Adam Duncan at hduncan2@utk.edu for more information.

Recent Sponsored Research Awards:

- Paul Ayers** – NPS "River Habitat Mapping"
- Paul Ayers** – MECHSIM "Advanced Vehicle-Terrain Interaction Modeling"
- John Buchanan** – USGS "Effect of Wastewater Strength on Soil Physical Properties When Using Subsurface Drip Irrigation"
- Doug Hayes** – NIH "Chemo-Enzymatic Synthesis of Unimolecular Micelles for Drug Deliver"
- Don Tyler** – CERES, Inc. "CERES Switchgrass Variety Evaluation Trial: University of Tennessee";
 -- USDA ARS "Use of FGD Gypsum to Improve the Productivity and Stability of Highly Erodible Loess Soils."
- Al Womac** – CP Products "Evaluation of CP-59-LS & CP-59-HV Nozzles"
- Al Womac, Willie Hart, Don Tyler** – Deere & Co. "Switchgrass Harvest Systems Analysis and Evaluation"
- Daniel Yoder** – USDA ARS "Development of RUSLE2 for use with Iowa's LIDAR digital elevation data and a GIS interface." – USDA NRCS "Revised Universal Soil Loss Equation Version 2 (RUSLE2) Maintenance."

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BESS NEWS - CALENDAR

[Return to
Front page](#)

Fall 2008 Seminar Schedule

November 21 Brian Chomicki, Josh Rowe (Final Presentations)

Faculty Meetings

December 3 BESS Faculty Retreat; Tenure & Promotion meeting afterward

Other Events

December 15 BESS Holiday Party, 2 p.m., Hollingsworth Auditorium, "Cookies, Pastries, & Punch"

BESS Students Judge Jefferson County Science Fair

Two of our students, Katie Peay and Boone Hillenbrand, were judges in a county-wide 5 grade science fair final held at Dandridge TN on Thursday, Nov 6. Twenty-eight finalists representing each of the elementary schools in Jefferson County participated in the fair. Katie and Boone accompanied Mr. David Bragg, the President of the Southern Appalachian Science and Engineering Fair.



CASNR INFO & CALENDAR

[Return to
Front
Page](#)

November 27 – 28	Thanksgiving Break, no classes
December 1	Deadline for College to submit course and curricula materials to UT Undergraduate and Graduate Councils
December 2	Last day of classes Deadline for total withdrawal from the University <i>Undergraduate students:</i> Last day to apply for Summer 2009 graduation
December 3, 6, 7	Study period UT GO opens for grade submissions (open 7 am to midnight Monday through Saturday; noon to midnight Sunday)
December 4, 5, 8 – 11	Final Exams (schedule here: HTTP://REGISTRAR.TENNESSEE.EDU/ACADEMIC_CALENDAR/FALL08EXAM.PDF
December 12	Final grades due for graduating doctoral students, fall semester 2008
December 12	Graduate Hooding Ceremony
December 13	UT Commencement
December 16	UT GO closes for fall semester grade submission; last submission by noon

Reminders:

Ocean, Freshwater, Forests, Health and other Symposia at the Biodiversity Conference

THE NATIONAL COUNCIL FOR SCIENCE AND THE ENVIRONMENT invites you to participate in the **9th National Conference on Science, Policy, and the Environment: *Biodiversity in a Rapidly Changing World***,

to address the challenge the changing world poses to biodiversity (and to humanity). The conference will provide an opportunity to look at what is happening to biodiversity in the context of radical climate disruption, human population rise, land use changes, globalization and other economic forces.

December 8-10, 2008

Ronald Reagan Building and International Trade Center, Washington, DC

<http://ncseonline.org/Conference/Biodiversity/>

FUNDING FOR INTERNATIONAL RESEARCH AND SCHOLARSHIP AND STUDENT SCHOLARSHIPS FOR STUDY ABROAD

If you are interested in locating funding opportunities for international research and professional activities, please take a look at our revised website: <http://ipanr.tennessee.edu/>. On the left side of the page, click on funding. If you are part of the teaching faculty or have contact with students, on the right side of the homepage, we have posted information on CASNR's two study abroad programs for 2009 and also a direct link to the Center for International Education's webpage on scholarships for study abroad. I hope there is something here that serves your needs.

---Dr. Robert H. Orr, Director of International Programs, phone: 865-974-7476

UT-K & COE INFO & CALENDAR

FALL EXAM SCHEDULE:

[HTTP://REGISTRAR.TENNESSEE.EDU/ACADEMIC_CALENDAR/FALL08EXAM.PDF](http://REGISTRAR.TENNESSEE.EDU/ACADEMIC_CALENDAR/FALL08EXAM.PDF)

EXTENSION INFO & CALENDAR

[Return
to Front
Page](#)

Final Candidates to be Interviewed for Extension Assistant Dean

The Search Committee for the position of Assistant Dean-Agriculture, Natural Resources and Resource Development, has identified four candidates to be interviewed. Those are:

Dr. D. Alan Barefield

Dr. Gary E. Bates

Dr. Ray W. Burden

Dr. Steven G. Isaacs

The candidates' curriculum vitae have been posted on the Search website -

<http://utextension.tennessee.edu/asstdeansearch/meetingsandminutes.htm>

We have scheduled December 1, 2, 3, and 4, 2008 for interviews. Each candidate will present a seminar in Knoxville, which will be webcast and archived for later viewing. Tentative times for the seminars are:

December 2 - 8:30 ET - Ray Burden

December 2 - 10:00 ET - Gary Bates

December 3 - 8:30 ET - Alan Barefield

December 3 - 10:00 ET - Steve Isaacs

All four candidates will also interview in Franklin, TN on Thursday, December 4.

A final interview schedule for each candidate will be posted on the website in the near future.

Charles Goan

Search Committee Chair

H. Charles Goan

Professor and Former Dean

University of Tennessee Extension

227 Morgan Hall

2621 Morgan Circle

Knoxville TN 37996-4530

865/974-7417 or 865/974-7114

865/974-1068 (fax)

cgoan@utk.edu

REMINDERS:

NRI WATER GRANT UPDATE:

From "Rozum, Mary Ann" MROZUM@CSREES.USDA.GOV

"In response to many requests, the NRI grant was changed in the farm bill to AFRI or Ag and Food Research Initiative. Due to legal changes, it will be delayed. A basic version of the RFA is expected on our website at

www.csrees.usda.gov around the end of Nov. The full RFA will be up in January with new electronic application forms

A water grant is expected under the new program." ---Mary Ann Rozum

NIWQP FY2008 PROJECTS ANNOUNCED

The CSREES National Integrated Water Quality Program announces the funding of \$10 million in water resources projects:

http://www.csrees.usda.gov/newsroom/news/2008news/10171_water_quality.html

A complete listing of the FY2008 Projects is posted on the National Water Program Website:

<http://www.usawaterquality.org/watershed/projects/2008.html>

Kelly Addy, Web Content Coordinator

National Water Program: A Partnership of USDA CSREES & Land Grant Colleges and Universities

<http://www.usawaterquality.org/> 401-874-7532

TDA – Water Resources Program “Request for Proposals” FY 2009 319 Partners:

Deadline for submittal of proposals (and Watershed Based Plans, if required) is **December 1**, 2008.

Link to RFP: <http://www.state.tn.us/agriculture/nps/319-RFPF.pdf>

TAES INFO & CALENDAR

[Return to
Front
page](#)

REMINDERS -- FUNDING OPPORTUNITIES:

UTRF MATURATION FUNDING DEADLINE APPROACHING

Please remind your faculty and staff that the deadline for the 2009 UTRF Maturation Funding Program is less than a month away (**November 21, 2008**).

The second annual UTRF Maturation Funding Program helps UT researchers further develop technologies that have the potential for commercial success. Up to \$15,000 (direct costs) will be awarded to the highest ranking proposals.

Rules :

- Open to all UT researchers (faculty, staff and students) at all campuses and institutes.
- Projects must be related to an existing UT invention/creation disclosure **OR** a proposal can be accompanied by a *new* UT invention/creation disclosure.
- Projects should provide new data or further demonstrate the technology to increase its commercial readiness.
- Funds should be directed to labor, materials and services necessary to achieve the proposed deliverable(s).
- Proposal should not exceed 3 pages and should describe the technology, the plan of work, the expected results, a budget (direct expenses only), and your assessment of the commercial opportunities for the technology.
- Proposal should be submitted to your campus research office by November 21, 2008.

Judging Criteria:

- Demonstration of a path for commercial development
- Market potential
- Stage of development

Deadlines and Schedule:

Deadline for proposal submission: November 21, 2008; Awards announced: December 19, 2008

Project start date: January 15, 2009; Project completion date: October 15, 2009

Final report to UTRF: November 16, 2009

For more information on the deliverables, rules and judging criteria, view the document posted at <http://utrf.tennessee.edu> or contact: Dr. Stacey Patterson, (865) 974-3140, sspatter@utk.edu

TDA – WATER RESOURCES PROGRAM “REQUEST FOR PROPOSALS” FY 2009 319 PARTNERS:

Deadline for submittal of proposals (and Watershed Based Plans, if required) is **December 1**, 2008.

Link to RFP: <http://www.state.tn.us/agriculture/nps/319-RFPF.pdf>

There are several changes in this year's RFP, so please read it over carefully before writing your proposal.

TDA anticipates receiving approximately \$3.1 million from EPA in FY 2009 and will disperse that money across the state by funding projects aimed at abating nonpoint source pollution. *Please keep in mind that the number one goal of this program is to remove streams from the 303(d) list.* When allocating money, highest priority will be given to projects that have that as a primary goal. It is also important to point out that all projects that receive funds for BMP implementation must have a Watershed Based Plan developed for the area in which the project will be done. This year's RFP attempts to provide a brief format to follow in order to quickly write a complete Watershed Based Plan. We no longer fund projects with the sole purpose of writing a Watershed Based Plan. These plans should now be written following the format in the RFP and submitted along with the proposal for implementation projects.

The deadline for the submittal of proposals (and Watershed Based Plans, if required) is December 1, 2008. Proposals may be submitted as hardcopies, but e-mail submissions are much preferred. If you have any questions about Watershed Based Plans or the process of submitting proposals, please contact Sam Marshall,

sam.marshall@state.tn.us). Ellington Agricultural Center ,440 Hogan Road, Nashville, TN 37220

Telephone: 615-837-5306 Fax: 615-837-5025

Call for Proposals for the Advancing Sustainable Agriculture Matching Planning Grants

Southern SARE invites planning grants from states seeking to build long-term capacity for sustainable agriculture.

In anticipation of Congressional Authority to appropriate greatly increased funding for SARE that can include matching grants of up to \$1 million, Southern SARE's planning grants will offer states the opportunity to lay the ground work for applying for those matching grants. Proposals for the Advancing Sustainable Agriculture Matching Planning Grants are due Monday, **December 1**, 2008. Obtain the call for proposals at <http://www.southernsare.uga.edu>

6th Annual P3 Awards:

A National Student Design Competition for Sustainability Focusing on People, Prosperity and the Planet

URL: http://es.epa.gov/ncer/rfa/2009/2009_p3.html Open Date: 09/22/2008 - Close Date: **12/23/2008**

Summary: The U.S. Environmental Protection Agency (EPA), as part of the P3 Award Program, is seeking applications proposing to research, develop, and design solutions to real world challenges involving the overall sustainability of human society. The P3 competition highlights the use of scientific principles in creating innovative projects focused on sustainability. The P3 Awards program was developed to foster progress toward sustainability by achieving the mutual goals of economic prosperity, protection of the planet, and improved quality of life for its people - people, prosperity, and the planet - the three pillars of sustainability. The EPA offers the P3 competition in order to respond to the technical needs of the world while moving towards the goal of sustainability. Please see the P3 website (<http://www.epa.gov/P3>) for more details about this program.

UTIA INFO & CALENDAR

[Return to
Front
Page](#)

21st Annual UT vs UK Blood Drive

The 21st Annual Orange & Blue Blood Drive will be held in the Hollingsworth Auditorium on **Thursday, November 20**, from 8:00 a.m. until 4:00 p.m. All blood types are needed! Donors will receive a free UT vs UK T- Shirt, free pint of Baskin Robbins ice cream and Medic's family blood coverage. One donation a year exempts you and your IRS dependants from paying supplier processing fees at any US hospital. Please call 7159 or e-mail jbell12@utk.edu if you would like to donate. Scheduling appointments will help determine the appropriate number of donors to prepare for. If you are not sure of your schedule, you can go by the Hollingsworth Auditorium anytime on November 20th and you will be processed as quickly as possible. Your participation in this worthwhile endeavor is very much appreciated.



All Aboard! The Holiday Express at the UT Gardens

The event opens Thanksgiving weekend and will be open to the public 1-9 p.m. November 26-29 and 1-6 p.m. November 30. After the opening weekend, the Holiday Express will be open 5-9 p.m. Fridays, 1-9 p.m. Saturdays, and 1-6 p.m. Sundays through January 4, 2009. Large group viewings are available and interested parties should call 865-584-7666. Cost is \$5 per person; children under 4 are admitted free.

Ten garden-scale model trains, thousands of lights and a miniature landscape featuring rivers, waterfalls and more than 100 buildings decorated for the holidays will delight visitors young and old at a new event that kicks off November 26 at the UT Gardens.

Holiday Express at the UT Gardens, an event for the entire family, features the trains running simultaneously on a quarter-mile track that winds through the fictional town of Ravensford. Visitors will wonder at the elaborate landscape, which includes replicas of existing East Tennessee architecture. The hand-crafted display is located on the Friendship Plaza at the entrance to the UT Gardens off Neyland Drive.

The Holiday Express is sponsored by the Knoxville News Sentinel and WBIR.

In addition to your attendance, we need your help getting the word out! If you are able to volunteer an hour or two of your time to distribute windshield flyers and posters during the kickoff week, please call Lorna Norwood at 865-974-7141. We also need your help putting up posters around your office, public spaces, student areas, or even around where you live, shop and worship. Please visit <http://utgardens.tennessee.edu/HolidayInfo.html> to download and print posters. Get on board and help us make this first-ever Holiday Express a success!

STUDENT INFO & CALENDAR

[Return to
Front
Page](#)

NEW COURSE OFFERING ANNOUNCEMENT

The Global Seminar

FWF 590 (section 004) – 3 credits

9:40 – 10:55 TR, Ellington 125

This new class is an opportunity for Seniors and Graduate Students to participate in a global classroom to explore issues related to sustainability and the environment. The course description below is from the main website for the seminar series (<http://www.globalseminar.org/>):

The critical issues of sustainability transcend national boundaries. Food security and its relationship to sustainable development have increasingly become issues of global concern. Therefore this course offers students around the world an opportunity to examine, discuss, and formulate positions to case studies on sustainability issues concerning population, the environment, natural resources and food systems. Each case study is analyzed from the following perspectives: a) Social/Cultural; b) Political; c) Economic; d) Technical; e) Health; f) Environmental; and g) Ethics/Philosophical. Students will focus on a variety of topics that demonstrate the dynamic interrelationships among population demographics, natural resources management, and food production.

Our partner institutions in this year's Global Seminar Cluster 4 will include (depending on each university's academic schedule): Univ. Autonoma de Guadalajara, Mexico; University of Florence, Florence, Italy; Delaware State University, USA; Tompkins Cortland Community College, New York; Virginia Tech University; and NPSUT, Taiwan

In this class a case study approach to content, international student teams, and Internet, video, satellite and telephone technologies are combined to meet the challenge of having a successful global classroom of students spread among institutions around the world. Our learning approach aims to promote critical reflection and experiential learning through the use of case studies of real events and people. The case studies are presented through videos, readings, and other documentation, which give realism and credibility and complements background materials. The seminar relies heavily on the use of modern information and communication technologies to provide students the opportunity to interact with their global classmates and professors. This year the seminar includes three interactive videoconferences to discuss case studies, continuous asynchronous discussions throughout the semester using an online discussion board and email, and short written assignments.

We will review one case at the beginning of the semester as a class and then participate in three case studies via videoconferencing with the other institutions. The three global cases will involve Bioprospecting, Bluefin Tuna, and Genetically-Modified Foods and Environmental Considerations.

Please contact Don Hodges (974-2706; dhodges2@utk.edu) for more information.

NEW COURSE OFFERING ANNOUNCEMENT

Biofuels and Bioproducts Engineering

CBE 494/590

Instructor: Abhijeet P. Borole.

Tue, Thu 5:10 PM ~C 6:25 PM

Description: The course will cover processes involved in transformation of biomass and other resources into biofuels and bioproducts. This will be an applied course, with focus on existing and upcoming technologies for bioconversion of renewable resources, description of current roadblocks and exposure to future needs. Intended primarily for senior class and graduate students from various disciplines, the course considers the emergence of biofuel/bioprocess engineering as a coherent field of research and practice. It will include a distinctive blend of elements ranging from molecular bioengineering and biotechnology to process design, resource assessment and life-cycle analysis. Biofuels such as ethanol, biodiesel, biohydrogen, and bioelectricity will be covered. A range of bioproducts from low volume, high value products to high volume low value products (biocommodities) will be discussed. Examples are biopolymers, renewable chemicals such as propanediol, lactic acid, etc. Among the biofuels, ethanol production will be the primary example, with coverage including feedstock production and logistics, biomass recalcitrance issues and unit operations within biorefineries. The course may include a few lectures from local experts on specific topics. The course will require the students to present a paper which can be on the general topic of bioproduct/biofuels or very specific targeting a single aspect of bioproduct development. Teams of students with different backgrounds (eg. Molecular Biology and Chemical Engineering or Biosystems Engineering) may jointly propose topics or choose from a list provided by the instructor.

STUDENT INFO & CALENDAR

[Return to
Front
Page](#)

Dissertation Workshop Sponsored by UT Libraries and Graduate School - January 6, 2009:

On **January 6**, 2009, the Graduate School and the University of Tennessee Libraries will once again host a co-sponsored event: **"The Dissertation and Scholarly Inquiry: A Workshop for Doctoral Students."**

The day-long list of activities will include information and resources on topics, such as completing and publishing a dissertation, intellectual property rights, and ethics in research. Morning and afternoon refreshments and lunch will be provided as well. The focus will be on students who have just begun a doctoral program and who have not yet started writing the dissertation. More advanced students working on the dissertation are welcome to register, provided space is available.

Guatemala video now on You Tube!

In May 2007, three faculty and a small group of UT student members of Engineers without Borders traveled to La Fortuna, Guatemala, home to about 400 people, to help install a rain-collection system for fresh, safe water supply to the village. Read the story in our archives [click here:](#)

Video is available now at:

<http://www.youtube.com/user/LaFortunaProject>

